

Aberration of *Dryas paphia*. (With plate).

By ALFRED SICH, F.E.S.

This very handsome aberration of the male of *Dryas paphia* was taken by Mr. J. A. Carnegie-Cheales, near St. Aguan, in the Department of the Yonne, in France, in July, 1907. It had apparently recently emerged from the pupa and was found resting on the grass beside the border of a wood. The figure is reproduced from a beautifully coloured drawing from the brush of Miss Carnegie-Cheales. The ground colour is normal, but the usual black markings are developed to an extraordinary extent. In the type there are three small sub-costal dashes in the forewing, in this specimen the central dash has become a large conspicuous spot. The black scaling on the veins of all the wings is very much increased, especially towards the margin. The spots and lines beyond the centre of the wings have coalesced and form irregular black bands. The antimarginal spots beyond the bands have also coalesced but horizontally. Those on the forewings appear as elongate ovals, while those on the hindwings assume the dumb-bell shape. It is said, "variety is pleasing," and this magnificent specimen forms no exception to the rule.

An account of the Breeding of *Amphidasis betularia* and ab. *doubledayaria*.

By MISS E. MILLER.

In the early morning of June 15th, 1910, I captured a pair of *A. betularia* from the side of our dining room window; the female being a lovely black ab. *doubledayaria* of medium size, and the male of the usual light type and rather small. The female laid several hundred ova in about three days, and the larvæ commenced to emerge on July 1st, when I sleeved them all out on plum, white willow, elm, birch and oak. A considerable number of the larvæ died in all stages, more especially those fed on plum and white willow. I have noticed before, and also in this case, that many *A. betularia* larvæ when fed on plum are green in colour and greatly resemble the young plum twigs. The moths emerged as follows:—

	AB. <i>doubledayaria</i> .	TYPE.	
May 16th,	1 ♂ + 1 ♀ ...		1 ♀ rather dark.
" 17th,	1 ♀ ...	1 ♂	
" 18th,	1 ♀		
" 20th,	...	1 ♂	
" 22nd,	1 ♀ ...	2 ♂ s + 1 ♀	
" 23rd,	2 ♀ s ...	2 ♂ s	
" 24th,	4 ♀ s ...	7 ♂ s	
" 25th,	3 ♂ s ...	3 ♂ s + 1 ♀	
" 26th,	1 ♂ + 1 ♀ ...	3 ♀ s	} with darker markings.
" 27th,	1 ♂ ...	1 ♂ + 1 ♀	
" 28th,	3 ♂ s + 1 ♀ ...	3 ♂ s +	
" 29th,	3 ♂ s + 2 ♀ s ...	1 ♂ + 4 ♀ s	
" 30th,	2 ♂ s ...	1 ♂ + 1 ♀	
" 31st,	2 ♂ s ...	3 ♂ s + 4 ♀ s	
June 1st,	1 ♂ + 2 ♀ s ...		1 ♀
" 2nd,	1 ♂ ...	1 ♂ + 1 ♀	

„	3rd,	3 ♀ s	...		2 ♀ s
„	4th,				1 ♀
„	5th,		...	1 ♂	
„	6th,	1 ♂ + 2 ♀ s			
„	7th,	1 ♀			
„	8th,	1 ♂ + 2 ♀ s	...		2 ♀ s
„	9th,				2 ♀ s
„	10th,	1 ♀	...		1 ♀
„	11th,	1 ♂ + 1 ♀	...		1 ♀
„	12th,	3 ♀ s	...		3 ♀ s
„	13th,	3 ♀ s	...	1 ♂ + 1 ♀	
„	14th,				
„	15th,	1 ♂ + 2 ♀ s	...	1 ♂	
„	16th,	2 ♂ s	...		2 ♀ s
„	17th,	1 ♂	...		3 ♀ s
„	18th,	1 ♂ + 1 ♀			
„	19th,				1 ♀
„	20th,	3 ♀ s	...		2 ♀ s
„	21st,	1 ♂ + 1 ♀	...		1 ♀
„	22nd,	1 ♀	...		1 ♀
„	23rd,	2 ♀ s			
„	24th,				
„	25th,				
„	26th,	1 ♀			
„	27th,				
„	28th,				
„	29th,	1 ♀			
„	30th,				
July	1st,				
„	2nd,				
„	3rd,	1 ♀			2 ♀ s
		27 ♂ s + 45 ♀ s	...	29 ♂ s + 43 ♀ s	
		72		72	

Of this number exactly half (72) are of each type; of the ab. *doubledayaria*, 27 are males and 45 females, and of the light type 29 are males and 43 females.

[I have to thank Mr. Turner for submitting these interesting notes to me for comment. The facts are quite in agreement with previous records of broods of *A. betularia* reared from parents, one of which was of the type form, while the other was of the var. *doubledayaria*. The late Mr. A. Harrison records a brood reared from eggs laid by a type ♀ crossed with a *doubledayaria* ♂:—50 *doubledayaria*=45.9%. 54 type=54.1%.

A brood I reared from wild parents, type ♂ and *doubledayaria* ♀ gave 109 *doubledayaria*=47%. 123 type=53%.

The Mendelian expectation in regard to these and Miss Miller's brood would be either all black or all of type form, if one of the parents happened to be a pure dominant (I think I am right in saying that the question is still open as to which form acts as dominant and which as recessive in the case of *A. betularia*) or, if one parent was a

D.R. (heterozygote) and the other a recessive the result should be 50% of each form. Of course none of these breeding results afford any direct evidence for or against the Mendelian Theory of Heredity, as the results are equally explicable according to the Galtonian Theory in the case of segregating characters. Miss Miller's brood is, however, a further addition to the evidence already large, which suggests an undue preponderance of dominant recessives (heterozygotes) among wild moths which exhibit melanism, a feature of the evidence which I do not recollect ever to have heard explained by any of the supporters of the Mendelian Theory of Heredity. The details of emergency while affording interesting and valuable data for later statistical work, which will no doubt be undertaken in Entomology as in other branches of science, do not suggest any obvious comment as they stand.—A. BACOT (F.E.S.)]

Lepidopterology.*

By Dr. T. A. CHAPMAN, F.Z.S.

This thick and sumptuous volume is not second to any of its predecessors; it is not first only in-so-far that each Fascicule has different interests to the others, and so it is impossible to compare them. There are 355 pages of text, 64 coloured plates, and 69 of reproductions of photographs.

The preface is devoted to the subject of "No description valid without a figure." It was obvious at the Oxford Congress that it is no use kicking against the pricks, and just as Mendel's discoveries were treated with contemptuous silence for 35 years, or as M. Oberthür tells us about the reception of Rambur's discoveries amongst the skippers, which have been still longer in fructifying, so must the principles underlying M. Oberthür's demand become more generally appreciated before anything practical can be done. As we become more and more overwhelmed with the flood of descriptions of new species, of which the number yet to be described much exceeds that of those we already know, so will the brevity and precision of figures as compared with descriptions be more valued. It may be further noted that there is, year by year, an increasing practical acquiescence in M. Oberthür's views, figures of the whole insect and anatomical and other details are more and more used, so that it seems highly probable that, though Oberthür's formula may continue to be refused acceptance, we may wake some morning to find that it has been all but universally adopted.

In the next section is a note by M. Serge Alphéraky proving that a sub-genus is really irrational and impossible. Various of his statements, by the way, are open to criticism, possibly because they are framed with a view to the point in question, rather than to mere general consideration.

Parts of his argument read as if a "genus" had first to be recognised and defined, and then it had to be seen what species would go into it. It seems to us to be precisely the reverse; first decide what species group themselves together as a genus, then define the genus on their characters, not forgetting that such definition may

* *Études de Lépidoptérologie comparée*, par Charles Oberthür, Fasc. VI., Rennes, Juillet, 1912.